



Wisconsin DNR Fisheries Information Sheet



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Water: Surprise Lake

County: Oconto

WBIC: 428100

Year: 2016

Surprise Lake is a 66-acre seepage lake located in north-west Oconto County near the town of Townsend. Surprise Lake has a maximum depth of 20 feet (Figure 1). The water is slightly acidic, with high visibility (Secchi depth = 13 feet). The shoreline is primarily upland hardwoods and conifers, with a small area of the shoreline consisting of wetland and coniferous bog. Littoral substrate is composed of 60% rubble, 20% sand, 15% gravel, and 5% muck.

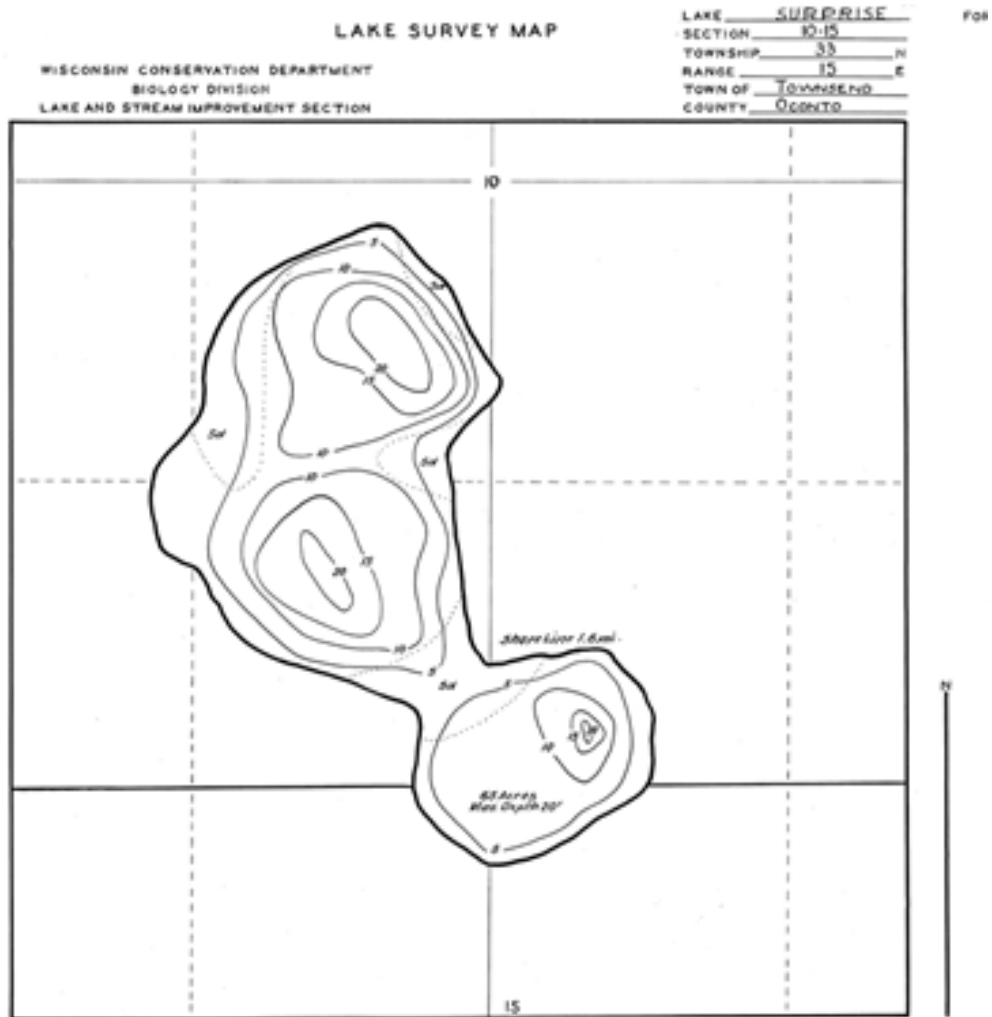


Figure 1. Surprise Lake – Oconto County.

Stocking records indicate that Surprise Lake has been stocked with largemouth bass and northern pike. Stocking of largemouth bass and northern pike occurred in the early 1950's. WDNR stocked 328 large fingerling walleye in both 2014 and 2016.

Previous WDNR surveys conducted in 1978 and 1981 indicated good numbers of northern pike, largemouth bass, walleye, black crappie, bluegill, pumpkinseed, and yellow perch. This is a summary of the most recent survey which was conducted during the spring of 2016. Fyke netting was conducted from April 13th through April 17th, and shoreline boat electrofishing was conducted on June 1st (Table 1).

Table 1. Catch composition from 2016 survey of Surprise Lake.

SUMMARY OF FISHES COLLECTED BY NUMBER		
*Common Name of Fish	Number	Length Range (inches)
Bluegill	644	2.6 - 9.5
Black crappie	174	5.5 - 13.6
Largemouth bass	60	6.8 - 18.9
Walleye	52	11.0 - 25.5
Yellow perch	28	4.9 - 8.2
Rock bass	23	4.7 - 9.3
White sucker	14	not measured
Northern pike	8	13.9 - 29.6
Pumpkinseed	5	3.2 - 8.0
Yellow bullhead	2	not measured
TOTAL	1,010	

* Common names of fishes recognized by the American Fisheries Society.

Bluegill

Bluegill was the most abundant panfish encountered on Surprise Lake. A total of 644 bluegill was captured, and accounted for 64% of the total fish collected (Table 1). Bluegill ranged in size from 2.6 to 9.5 inches (Figure 2). Bluegill proportional stock density (PSD) was 66 and relative stock density (RSD^P) was 3 based on catches from fyke netting. Sixty-four percent of bluegill sampled were ≥ 6 inches. A subsample of 53 bluegill was aged from 3 to 9 years. Growth was average compared to other lakes in northern Wisconsin (Figure 3). Bluegill natural reproduction and recruitment appear to be good.

Largemouth bass

Largemouth bass was the the most abundant predator species on Surprise Lake. A total of 60 largemouth bass was collected and accounted for 6% of the total fish collected (Table 1). Largemouth bass ranged in size from 6.8 to 18.9 inches (Figure 4). Largemouth bass PSD and RSD^P from fyke netting was 56 and 33, respectively. Largemouth bass PSD and RSD^P

from electrofishing was 42 and 11, respectively. Thirty-five percent of largemouth bass sampled were greater than the minimum length for harvest (≥ 14 inches). A subsample of 48 largemouth was aged from 2 to 12 years old. Growth was average compared to other lakes northern Wisconsin (Figure 5). Natural reproduction and recruitment of largemouth bass was evident in Surprise Lake based on the length frequency of bass in our sample (Figure 4).

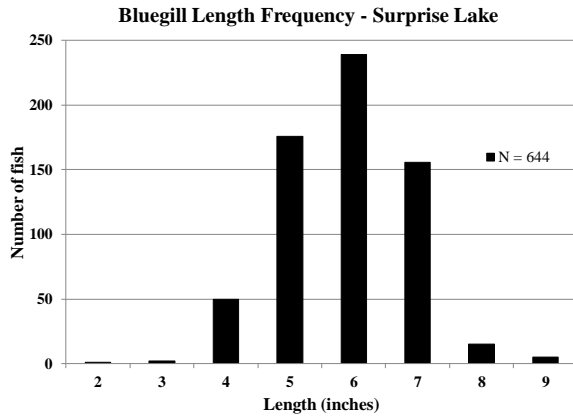


Figure 2. Bluegill length frequency.

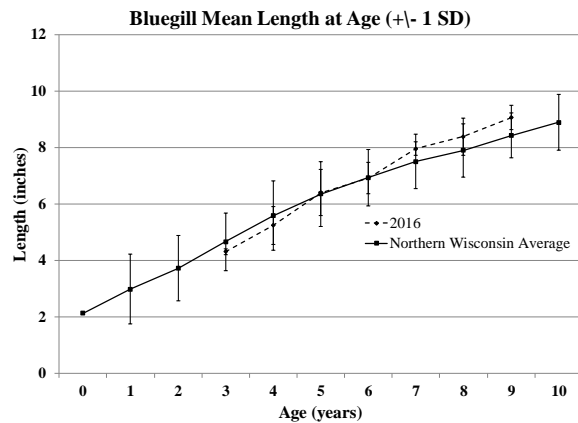


Figure 3. Bluegill mean length at age.

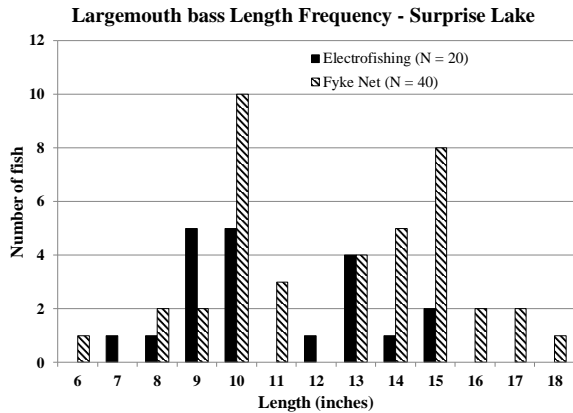


Figure 4. Largemouth bass length frequency.

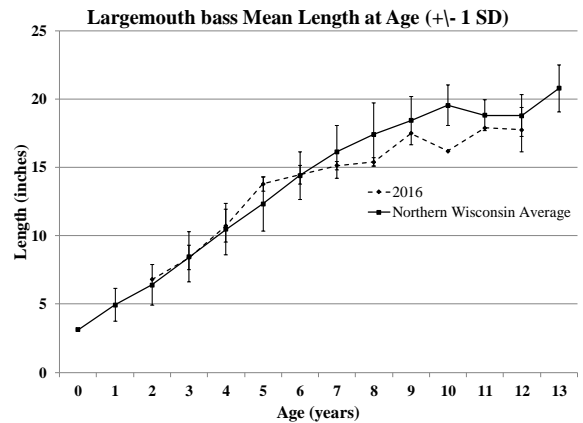


Figure 5. Largemouth bass mean length at age.

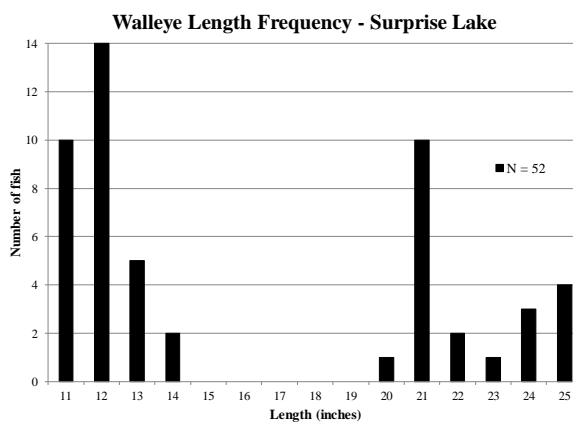


Figure 6. Walleye length frequency.

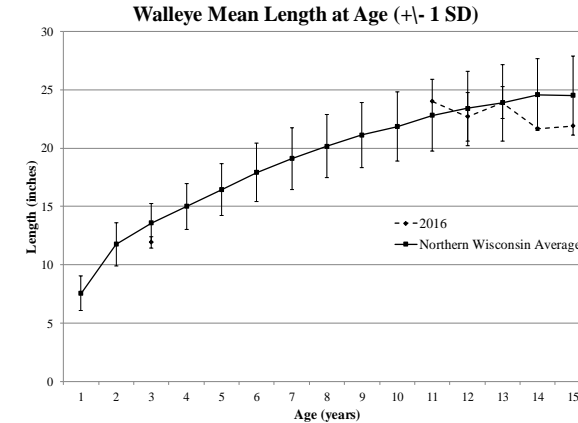


Figure 6. Walleye mean length at age.

Walleye

Walleye abundance was low however, the population has been maintained by natural reproduction until large fingerling walleye were stocked in 2014 and 2016 at the rate of 5 fish per acre (328 total per stocking year). A total of 52 walleye was collected during the 2016 survey and accounted for 5% of the fish collected (Table 1). Walleye ranged in length from 11.0 inches to 25.5 inches (Figure 5). A subsample of 24 walleye was aged from 3 to 15 years old (Figure 6).

Summary

Species composition has not changed much since previous surveys. Few stocked walleye were expected during spring fyke netting since this portion of the survey primarily targets adult walleye however, walleye stocking should continue in alternate years at the rate of 5/acre. Northern pike numbers have decreased, but largemouth bass abundance has increased. The bluegill and crappie populations in Surprise Lake is good, with many harvestable-sized individuals present. The conductivity of Surprise Lake is low, which reduced our ability to collect fish via electrofishing, and ultimately reduced the number of smaller fish in our sample compared to spring fyke netting. Overall, the fishery in Surprise Lake is good. The current fishing regulations are adequate to provide anglers with a respectable fishing opportunity. Therefore, no fishing regulation changes are recommended.